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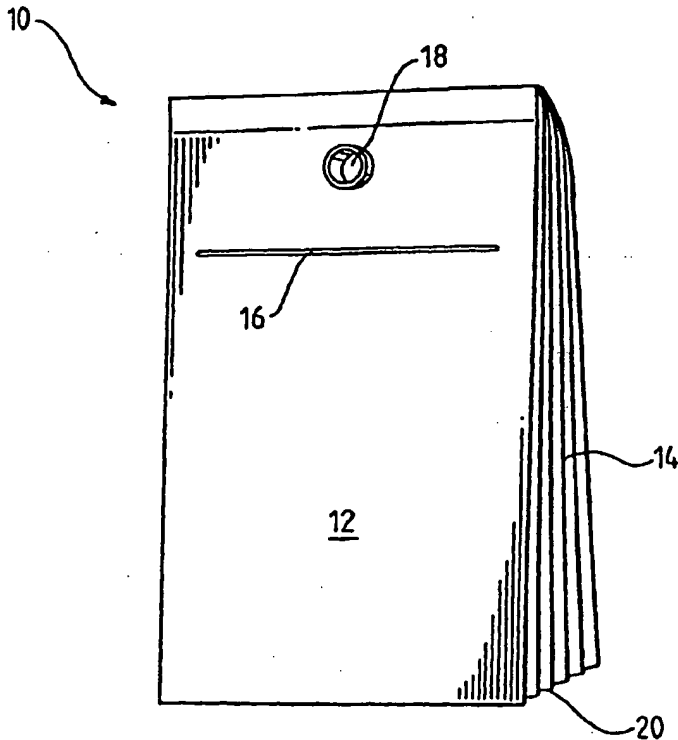
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(54) Title: RECONSTITUTION PACKAGE



(57) Abstract: A package (10) for a material which can be reconstituted by adding a liquid thereto comprises an expandable bag (12) for containing the material in its unreconstituted state. The bag has an opening (18) allowing liquid to be introduced into the package, and an opening (16) allowing the reconstituted material to be removed from the package, which may be one and the same opening. The openings may be reclosable, and may also be water-tight. The bag may be reinforced at its lower end, and can have a carrying handle at its upper end.

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- 1 -

## RECONSTITUTION PACKAGE

5           The present invention relates to a package, and more particularly to a package which allows a product contained therein to be reconstituted by the addition of a liquid such as water. The package finds particular application in the field of growing media.

10           The term "growing medium" is used herein to denote any medium in which plants can grow, and includes (but is not limited to) substances such as soil, sand, compost, peat and coir. Coir is a peat-free growing medium made from the pith of the coconut husk.

15           It is a characteristic of some growing media, and in particular coir, that they are relatively heavy when sufficiently moist to form a viable growing medium, but have relatively low intrinsic value. As a result, they are expensive to transport.

20           In order to circumvent this, coir in particular is normally shipped from its country of origin in partially desiccated compressed blocks or briquettes. These blocks are then reconstituted by adding water. This may be done, for example, at a commercial grower's  
25           establishment, or at a growing media merchant, who may also add fertilizers or the like to the coir.

          In addition, the blocks are also sold to the domestic market, and the purchaser then reconstitutes the coir themselves at home. As an example, coir is  
30           typically sold in 650g blocks, measuring around 20cm by 10cm by 5cm (and thus with a volume of around 1 litre). The block is normally placed in a receptacle such as a bucket, to which water is added. The mixture is then agitated to mix the coir and the water until the coir is  
35           fully reconstituted. This will produce around nine litres of usable growing medium.

          There are a number of drawbacks to this process. A container is required for mixing, which is in itself a

- 2 -

time-consuming process. The process can be rather messy, both from the reconstituted coir and the dried coir, which is dusty. In addition, if not all of the reconstituted coir is used immediately, then the  
5 container (or another container) must be used to store the coir.

At least in its preferred embodiments, the invention seeks to overcome these drawbacks.

According to the invention, there is provided a  
10 reconstitution package for a material which can be reconstituted by adding a liquid thereto, comprising an expandable bag for containing the material in its unreconstituted state, said bag having an opening allowing liquid to be introduced into the package, and  
15 an opening allowing the reconstituted material to be removed from the package.

In a package of this type, the material (such as coir) is reconstituted inside the package. There is therefore less mess. The ability of the bag to expand  
20 allows the material to increase in volume as it is reconstituted.

Preferably, the openings are reclosable. This allows the package to be reclosed after some of the reconstituted material has been removed, and so there is  
25 no need to use all of the material at one time.

Two separate openings may be provided. Alternatively, a single opening may be provided for the introduction of liquid and the removal of reconstituted material. A package with a single opening can be easier  
30 to manufacture. In a preferred form, the opening(s) is(are) resealable and liquid-tight.

Preferably, the opening allowing liquid to be introduced into the package is of a size to allow insertion of the end of a hose. This facilitates the  
35 introduction of liquid into the container. It is further preferred for the opening allowing liquid to be introduced into the package to be provided with means to grip the end of a hose inserted therein, to reduce the

- 3 -

risk of the hose accidentally falling out of the opening, which could lead to spillage.

The opening allowing the reconstituted material to be removed from the package can take any suitable form.

5 However, it is preferred for the opening to take the form of an elongate opening extending along a face of the bag. This allows an end user to insert tools such as trowels into the package to remove the reconstituted material. To further facilitate this, it is preferred  
10 that the elongate opening extends across a face of the bag, or even around the entire circumference of said bag.

As the package must accommodate the material in its reconstituted form, it must have a sufficient volume to  
15 do so. The package could be supplied in such a state that it already has the appropriate volume; however, such a package occupies more space than necessary, and increases shipping costs. Thus, it is preferred for the package to be capable of expanding to accommodate the  
20 reconstituted material. In a preferred form, the bag of the package is pleated or otherwise folded in its unexpanded state. These pleats or folds allow the bag to increase in volume as the material is reconstituted.

Preferably, the bag is adapted to stand on an end,  
25 with the opening(s) being provided in the upper region of the bag. This facilitates both the reconstitution step, and the step of removing material from the package. It is further preferred for the lower end of the bag to be reinforced.

30 In a preferred form, the bag is provided with a carrying handle, to facilitate transport. As mentioned above, the material being reconstituted may expand to several times its original volume during reconstitution, and so it may be necessary for the bag to have a  
35 considerable height to accommodate the reconstituted material. This height may be greater than the distance between a user's hand and the ground when the user is walking, and so in a particular form, the handle is

- 4 -

positioned below the opening allowing the reconstituted material to be removed from the package when the package is carried by the handle. This opening will be positioned at or near the top of the bag, to simplify removal of the material.

A preferred embodiment of the invention will now be described by way of example only and with reference to the accompanying drawings, in which:

Figure 1 is a schematic perspective view of the package;

Figure 2 is a schematic side view of the package before reconstitution;

Figure 3 is a schematic side view of the package after reconstitution; and

Figure 4 is a schematic perspective view of an alternative form of the package.

As can be seen from the Figures, and in particular Figures 1 and 2, the package 10 is generally in the form of a bag 12 with pleated sides. This pleating 14 allows the bag to expand with its contents, and it will be appreciated that other arrangements allowing the bag 12 to expand in this way can also be used. The bag may be formed from any suitable sheet material which is sufficiently hardwearing and sufficiently flexible to allow the expansion and which will not react with or contaminate the contents.

Contained in the package as supplied, and shown schematically in phantom in Figure 2, is a block 30 of compressed desiccated coir or the like, which may have fertilizers added.

Towards one end of the package 10 is a recloseable elongate opening 16, which may be of the "zip-lock" type, or of any other suitable form. This opening may extend across the full width of one face of the package, or may have a smaller extent. In any case, the opening is preferably of sufficient length to allow an implement such as a trowel or a spade to be inserted into the package. The opening may be resealable and watertight.

- 5 -

A second opening 18 can also be provided, for the insertion of a hose or the like. The opening may be provided with means for grasping the end of the hose with sufficient force to prevent it from falling out.

5 This may be in the form of a resilient piece of plastics material with slits in it, the slits forming an aperture through which the end of a hose can be inserted, although the skilled person will appreciate that any other similar form of gripper can be used. The opening  
10 may be closed by a screw cap (in a similar way to openings on cartons for milk and juice), or by any other suitable type of closure, and may again be resealable and water-tight.

The package is adapted to stand upright on one end  
15 20, so that the openings 16, 18 are at the top. This can be achieved by making the package generally wedge-shaped (as shown), or by having a relatively heavy piece 22 of preferably plastics material at the base of the package 10. Of course, it is possible to use both  
20 approaches at once, and this may be preferred as it reinforces the lower end 20 of the package, which is more likely to suffer wear and tear.

Use of the package is as follows. A user will purchase the package 10 containing the compressed coir  
25 at a garden supply centre or the like, and will take it home.

When the user has the package at home, the second opening 18 is opened and the end of a hose or the like is inserted into it. Water is then added to the coir in  
30 the package 10 to reconstitute it. Once sufficient water has been added, the hose is removed and the opening 18 preferably closed. The addition of the water will force the package to expand, opening out the pleats 14 of the bag 12, as can be seen from Figure 3. The  
35 compressed desiccated coir will then absorb the water and become reconstituted.

The user can then open the elongate opening 16 and insert a trowel or the like to remove the reconstituted

- 6 -

coir from the package. Once the required amount of reconstituted coir has been removed, the package may be resealed.

5 It will be appreciated that the package has a number of advantages over the prior art. The procedure as a whole is cleaner; as the compressed desiccated coir is contained within the sealed package, there is no problem with it shedding dust, and in addition the reconstitution part of the process takes place in a  
10 sealed container. No additional containers are required for the reconstitution. In addition, the package as supplied is much lighter than a package of moist growing medium, and is thus easier for elderly or less robust persons to pick up and transport. Further, as the  
15 package is less bulky than a package of moist growing medium, shipping costs are reduced, and a retailer can stock more of the packages. The packages can be displayed indoors at garden supply centres or the like, which can help to increase sales during periods of bad  
20 weather when prospective purchasers are unwilling to be outdoors. Lastly, in its preferred form, the package is resealable, and so there is no need to use all of the coir at once.

It will also be appreciated by the skilled person  
25 that a number of variants to the preferred embodiment are possible. For example, the opening for the hose can be dispensed with, and water can be introduced into the package through the elongate opening, and a package of this type (with a single opening) may be preferred for  
30 manufacturing reasons, as it is easier to form a single opening than two separate openings. In addition, the elongate opening may extend the full circumference of the package, allowing easier access to the reconstituted coir.

35 A handle may be provided towards the top of the bag to simplify carriage. This could be in the form of a simple cutout in the sheets forming the bag, the edges of which are sealed to each other.



- 7 -

It may be necessary to form the handle below the elongate opening; the bag will expand considerably as the material is reconstituted, and this may require it to be of a height greater than the distance between a user's hand and the ground when the user is walking, in which case the handle must be positioned below the elongate opening. A package of this type is shown in Figure 4. Here, the handle 32 is formed as a simple cutout through the front and back sheets of the bag, which are joined together when the material is in its unreconstituted state (as shown). As will be seen, the handle 32 is formed well below the elongate opening 16.

The handle and the opening may be arranged so that the user can insert an implement into the bag past the handle, to allow removal of the reconstituted material, or the handle may be formed such that the sheets forming the bag can be pulled apart to allow a user access to the full width of the bag.

Further, although the description has been in the context of a package for growing media, and in particular coir, it will be appreciated that the package can be used with other materials.

- 8 -

## CLAIMS

1. A reconstitution package for a material which can  
5 be reconstituted by adding a liquid thereto, comprising  
an expandable bag for containing the material in its  
unreconstituted state, said bag having an opening  
allowing liquid to be introduced into the package, and  
an opening allowing the reconstituted material to be  
10 removed from the package.
2. A package as claimed in claim 1, wherein a single  
opening is provided for the introduction of liquid and  
the removal of reconstituted material.
- 15 3. A package as claimed in claim 1 or claim 2, wherein  
said opening(s) is(are) recloseable.
4. A package as claimed in claim 3, wherein said  
20 opening(s) is(are) resealable and liquid-tight.
5. A package as claimed in claim 1, wherein said  
opening allowing liquid to be introduced into the  
package is of a size to allow insertion of the end of a  
25 hose.
6. A package as claimed in claim 5, wherein said  
opening allowing liquid to be introduced into the  
package is provided with means to grip the end of a hose  
30 inserted thereinto.
7. A package as claimed in any preceding claim,  
wherein said opening allowing the reconstituted material  
to be removed from the package is an elongate opening  
35 extending along a face of the bag.
8. A package as claimed in claim 7, wherein said  
elongate opening extends across substantially the full

- 9 -

width of a face of the bag.

5 9. A package as claimed in claim 7, wherein said elongate opening extends around the entire circumference of said bag.

10. A package as claimed in any preceding claim, wherein said bag is pleated in its unexpanded state.

10 11. A package as claimed in any preceding claim, wherein said bag is adapted to stand on a lower end, with the opening(s) being provided in the upper region of the bag.

15 12. A package as claimed in claim 11, wherein the lower end of the bag is reinforced.

20 13. A package as claimed in any preceding claim, wherein the bag is provided with a carrying handle.

14. A package as claimed in claim 13, wherein, when the package is carried by the handle, the handle is positioned below the opening allowing the reconstituted material to be removed from the package.

25 15. A package as claimed in any preceding claim, wherein the package additionally comprises a piece of material for reconstitution.

1/3

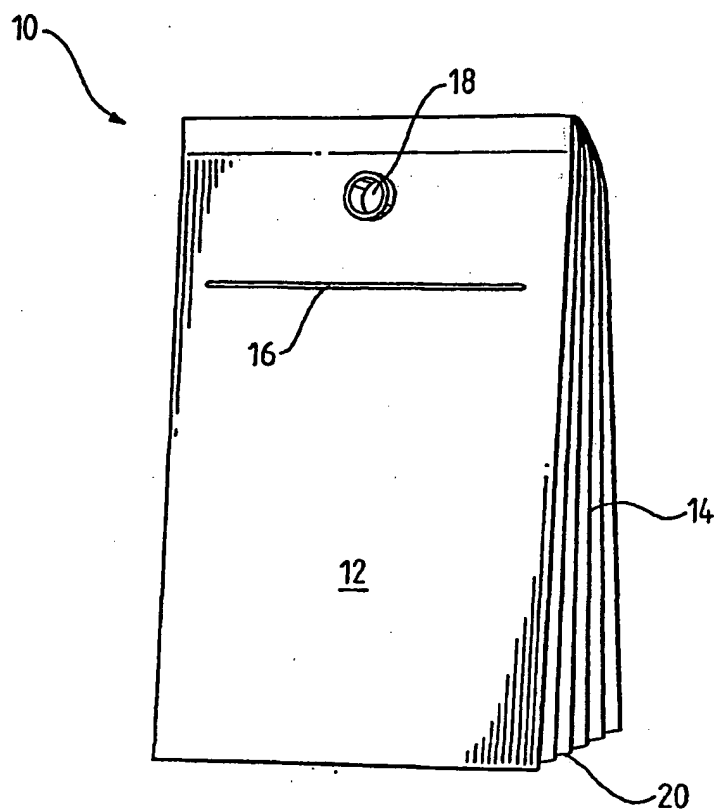


FIG. 1

2/3

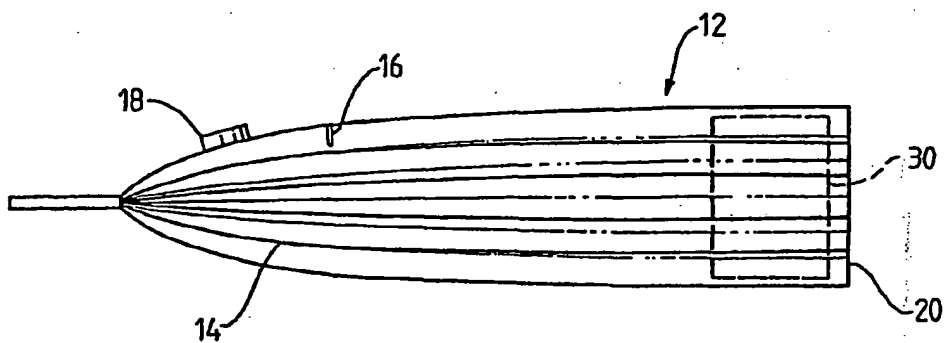


FIG. 2

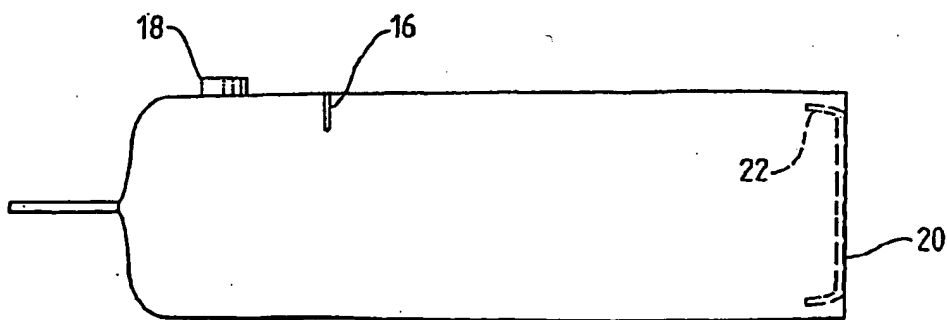


FIG. 3

3/3

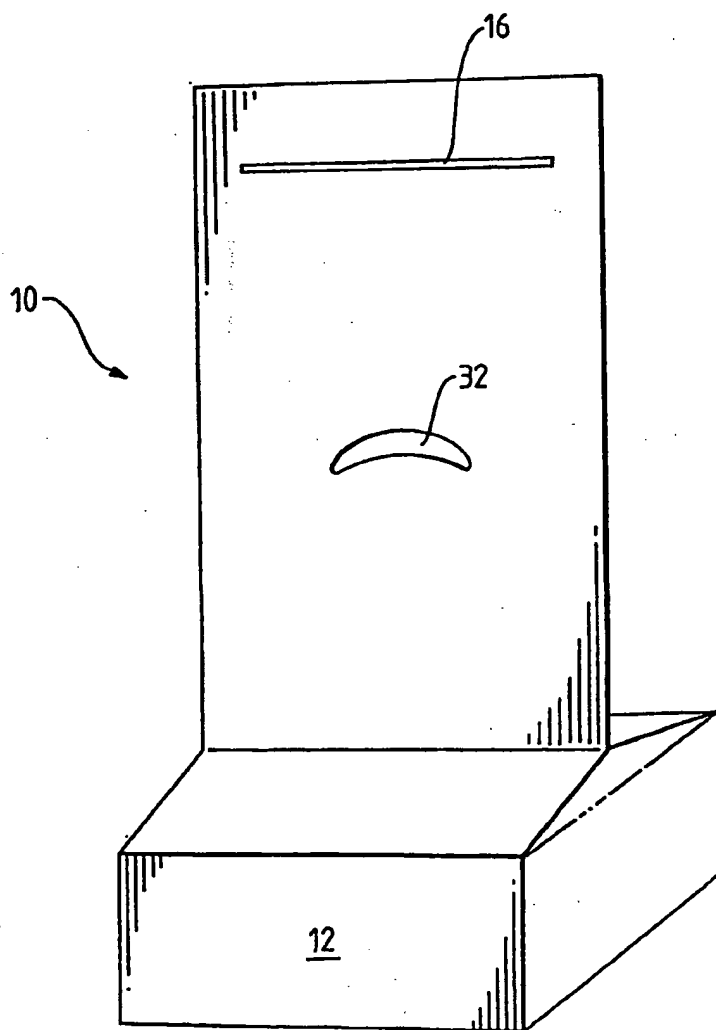


FIG. 4

## INTERNATIONAL SEARCH REPORT

PCT/GB 02/03068

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 B65D75/58 B65D75/00 B65D30/20 B65D33/08 B65D33/25 B65D81/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 B65D A01G		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search  8 October 2002		Date of mailing of the international search report  16/10/2002
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  Farizon, P

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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